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No. 6110

*May 26, 1891 — May 11, 1896*







6110.

THE

TWENTY-FIRST ANNUAL REPORT

OF THE

BOARD OF DIRECTORS

OF THE

ZOOLOGICAL SOCIETY

OF PHILADELPHIA.

(INCORPORATED MARCH 21ST, 1859.)

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READ AT THE ANNUAL MEETING OF THE MEMBERS AND LOAN-  
HOLDERS OF THE SOCIETY.

APRIL 27th, 1893.

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PHILADELPHIA :

ALLEN, LANE & SCOTT'S PRINTING HOUSE,

Nos. 229, 231, and 233 South Fifth Street.

1893.











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THE  
**ZOOLOGICAL SOCIETY OF PHILADELPHIA.**

OFFICE, FAIRMOUNT PARK.

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OFFICERS FOR THE YEAR ENDING APRIL 26th, 1894.

**PRESIDENT,**  
CHARLES PLATT.

**VICE-PRESIDENTS:**

GEORGE W. CHILDS, J. VAUGHAN MERRICK

**CORRESPONDING SECRETARY,**  
PROF. HENRY C. CHAPMAN.

**RECORDING SECRETARY,**  
HENRY T. COATES.

**TREASURER,**  
WILLIAM HACKER.

**DIRECTORS:**

|                          |                         |
|--------------------------|-------------------------|
| WILLIAM H. MERRICK,      | CHARLES M. LEA,         |
| ISAAC J. WISTAR,         | CHRISTIAN C. FEBIGER,   |
| CHARLES W. TROTTER,      | DAVID W. SELLERS,       |
| FRANCIS T. FASSITT,      | SAMUEL G. DIXON, M. D., |
| GALLOWAY C. MORRIS,      | J. BAYARD HENRY,        |
| FRANCIS W. LEWIS, M. D., | JAMES B. LEONARD.       |

**ACTUARY,**  
CHARLES L. JEFFERSON.

**SUPERINTENDENT OF THE GARDEN,**  
ARTHUR ERWIN BROWN.

**SOLICITORS:**  
SAMUEL WAGNER, WM. W. MONTGOMERY.





# REPORT

## OF THE

# BOARD OF DIRECTORS.

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PHILADELPHIA, April 27th, 1893.

THE Board of Directors of the Zoological Society of Philadelphia submit to the members and loan-certificate holders their Twenty-first Annual Report of the operations of the Society for the year ending on the 28th of February, 1893.

### MEMBERS.

The number of members at the close of the year was—

|                                 |              |
|---------------------------------|--------------|
| Annual members . . . . .        | 405          |
| Life members . . . . .          | 1,349        |
| Corresponding members . . . . . | 9            |
| Honorary members . . . . .      | 20           |
| Perpetual members . . . . .     | 258          |
| Total . . . . .                 | <u>2,041</u> |

The following is a report in detail of the admissions and receipts for the year:—

|                                                                                                                     |                |
|---------------------------------------------------------------------------------------------------------------------|----------------|
| Adults (paying at gates) . . . . .                                                                                  | 137,412        |
| Children (paying at gates) . . . . .                                                                                | 50,031         |
| Members (including Life and Annual Members,<br>loan-holders' annual, and complimentary annual<br>tickets) . . . . . | 2,548          |
| Loan-holders' single tickets . . . . .                                                                              | 27,293         |
| Free admissions (charitable institutions, donors'<br>tickets, &c.) . . . . .                                        | 2,032          |
| Coupon tickets . . . . .                                                                                            | 832            |
| Excursion tickets . . . . .                                                                                         | 14,163         |
|                                                                                                                     | <u>234,311</u> |

*Monthly Record of Visitors for 1892-93, with corresponding account for 1891-92.*

| MONTH.            | 1891-92. | 1892-93. | COMPARISON.         |
|-------------------|----------|----------|---------------------|
| March . . . . .   | 8,985    | 6,344    | Decrease . . 2,641  |
| April . . . . .   | 22,394   | 18,279   | " . . 4,115         |
| May . . . . .     | 39,812   | 28,043   | " . . 11,769        |
| June . . . . .    | 25,200   | 20,047   | " . . 5,153         |
| July . . . . .    | 36,497   | 32,478   | " . . 4,019         |
| August . . . . .  | 45,605   | 32,794   | " . . 12,811        |
| September . . . . | 41,513   | 39,458   | " . . 2,055         |
| October . . . . . | 30,412   | 31,082   | Increase . . 670    |
| November . . . .  | 12,768   | 10,883   | Decrease . . 1,885  |
| December . . . .  | 10,348   | 6,888    | " . . 3,460         |
| January . . . . . | 5,815    | 3,341    | " . . 2,474         |
| February . . . .  | 7,070    | 4,674    | " . . 2,396         |
|                   | 286,419  | 234,311  | Decrease . . 52,108 |

Average daily admissions . . . . . 642

The greatest number of visitors on any one day was

on Monday, July 4th . . . . . 5,132

*Monthly Record of Receipts from Admissions for 1892-93, with corresponding account for 1891-92.*

| MONTH.      | 1891-92.    | 1892-93.    | COMPARISON.             |
|-------------|-------------|-------------|-------------------------|
| March . .   | \$1,407 93  | \$918 64    | Decrease . . \$489 29   |
| April . .   | 3,371 32    | 2,554 74    | " . . 816 58            |
| May . .     | 5,118 41    | 3,836 26    | " . . 1,282 15          |
| June . .    | 3,055 20    | 2,669 17    | " . . 386 03            |
| July . .    | 5,174 64    | 4,222 65    | " . . 951 99            |
| August . .  | 5,925 59    | 4,375 58    | " . . 1,550 01          |
| September   | 5,223 71    | 5,198 70    | " . . 25 01             |
| October . . | 3,410 47    | 4,001 51    | Increase . . 591 04     |
| November    | 1,862 94    | 1,526 25    | Decrease . . 336 69     |
| December,   | 1,577 53    | 1,014 08    | " . . 563 45            |
| January . . | 754 04      | 519 93      | " . . 234 11            |
| February,   | 901 43      | 750 25      | " . . 151 18            |
|             | \$37,783 21 | \$31,587 76 | Decrease . . \$6,195 45 |



Average daily receipts from admissions . . . . . \$86 54  
 The largest amount of receipts at the gates on any  
 one day was on Monday, July 4th . . . . . 751 54

*Total Receipts on the several days of the week, and their respective averages for 1892-93.*

| RANK. | DAYS.               | TOTAL RECEIPTS. | AVERAGE. |
|-------|---------------------|-----------------|----------|
| 1     | Sunday . . . . .    | \$11,995 33     | \$230 68 |
| 2     | Saturday . . . . .  | 5,967 40        | 114 76   |
| 3     | Monday . . . . .    | 3,923 01        | 75 44    |
| 4     | Thursday . . . . .  | 2,651 99        | 51 00    |
| 5     | Wednesday . . . . . | 2,574 11        | 49 50    |
| 6     | Tuesday . . . . .   | 2,269 60        | 42 82    |
| 7     | Friday . . . . .    | 2,206 32        | 42 43    |
|       |                     | \$31,587 76     |          |

Among the causes which have brought about the serious decrease in the income of the Society, the severity of the weather which prevailed during both the summer and winter of the past year have probably played the chief part, but there is yet reason for anxious questioning whether the Garden has not become in some measure a victim of a sort of popular apathy, to which its conditions tend to expose it. An institution of permanent nature, excluded by its object, as well as by its organization, from such sensational features as would serve to advertise it constantly before the public attention and yet dependent upon that public for its means of support, is peculiarly liable to be regarded at frequent periods with the sort of apathy which develops from long familiarity—having existed through a course of past years, its continued existence comes to be assumed as a fixed fact and the end is endangered by neglect rather than by real want of interest.

In administering the affairs of the Society, the Board has been strictly confined to its legitimate purposes by the

provisions of its charter, as well as by their sense of a proper conduct of the trust confided to them and their constant object has been to place the Garden—purely as a Zoological Garden—in the front rank of such institutions.

In this they confidently feel that they have succeeded in greater measure than is perhaps commonly recognized by the people of our city, as few among the great gardens of the world can justly be considered as generally superior to our own.

The public services rendered by such an institution are comprised in the very definition of education, in its broad, modern sense, and need demonstration in this day quite as little as do its other functions in the direction of recreation, but it may be considered doubtful if the general view perceives as yet, the full value in the great educational object lesson system of our time, of an institution which attracts at one moment, into the same path, two such differing elements of human intelligence as the capacity for observation and the love of enjoyment, which, differing though they do, must both be brought into harmony to reach the best results, especially in the early years of individual development.

The Board desires to express here its conviction that with the spread of the present awakening in the subject of instruction of the general public, this view of the relation of the Zoological Garden to the society among which it is placed, will reach a wider acceptance, with the double result of greatly extending the Society's usefulness and at the same time, determining towards it such a measure of public or private liberality as will place it beyond the dangers which threaten its existence, if a period of such financial depression as is shown by the present report, were to extend to a period longer than one year.

That this is not a fancied, but a present danger, the figures of the accompanying statement of income and expenditures, will show at a glance and the attention of the public can not be too strongly directed towards them.

The appropriation of \$5000 made by the City Councils to the Commissioners of Fairmount Park, for the betterment of the portion of the Park occupied by the Zoological Garden, was devoted to several purposes which were especially needed. These were: the completion of a system of sewerage to carry all drainage from the large buildings previously unprovided and the surface flow from the outdoor enclosures, into the city sewers; the erection of an iron railing, constituting outside pens on both sides of the deer-house; the erection of a substantial picket fence, nine feet high, along the greater part of the Thirty-seventh Street line of the Garden, and the renewal of a portion of the asphalt walks.

The financial condition of the Society is shown in the Treasurer's statement, Appendix A, and the report of the General Superintendent, Appendix B, shows the present condition of the menagerie and the details attending the operation of the Garden during the year.

The Board desires to express its thanks for the many donations of animals which have been received.

By order of the Board,

HENRY T. COATES,

*Secretary.*



# APPENDIX A.

## INCOME AND EXPENDITURES.

For fiscal year ending March 1st, 1893.

### INCOME.

|                                           |           |             |
|-------------------------------------------|-----------|-------------|
| Members' fees and dues . . . . .          | \$825 00  |             |
| Admission receipts . . . . .              | 31,587 76 |             |
| Rents at Garden (on account of) . . . . . | 800 00    |             |
| Interest, discount, &c. . . . .           | 1,629 37  |             |
| Sundry receipts . . . . .                 | 743 18    |             |
| Donation . . . . .                        | 10 00     |             |
|                                           | <hr/>     | \$35,595 31 |

### EXPENDITURES.

(Exclusive of Permanent Improvements, &c.)

|                                                        |             |             |
|--------------------------------------------------------|-------------|-------------|
| Salaries . . . . .                                     | \$18,841 56 |             |
| Office expenses . . . . .                              | 212 53      |             |
| General expenses . . . . .                             | 21,955 52   |             |
|                                                        | <hr/>       | \$41,009 61 |
| Estimated loss and depreciation on animals . . . . .   | 6,704 35    |             |
| Balance to debit of profit and loss for year . . . . . | 12,118 65   |             |
|                                                        | <hr/>       | \$35,595 31 |

## CAPITAL.

Receipts and expenditures for the year ending March 1st, 1893.

### RECEIPTS.

|                                                                                                                               |          |             |
|-------------------------------------------------------------------------------------------------------------------------------|----------|-------------|
| Sales of animals . . . . .                                                                                                    | \$169 25 |             |
| Received from the city of Philadelphia through<br>the Commissioners of Fairmount Park . . . . .                               | 5,000 00 |             |
| Legacy, estate of John L. Neill, deceased . . . . .                                                                           | 8,500 00 |             |
| Legacy, estate of Geo. S. Pepper, deceased . . . . .                                                                          | 2,250 00 |             |
| Legacy, estate of Sarah B. Sutton Spang, de-<br>ceased . . . . .                                                              | 95 00    |             |
| Life memberships . . . . .                                                                                                    | 100 00   |             |
| Add the following amount charged to profit and<br>loss for estimated loss by death and deprecia-<br>tion of animals . . . . . | 6,704 35 |             |
|                                                                                                                               | <hr/>    | \$22,818 60 |

## EXPENDITURES.

|                                                                                                 |            |                    |
|-------------------------------------------------------------------------------------------------|------------|--------------------|
| Purchase of animals . . . . .                                                                   | \$4,319 60 |                    |
| Horticultural . . . . .                                                                         | 106 50     |                    |
| Water supply and drainage . . . . .                                                             | 1,868 53   |                    |
| Fencing . . . . .                                                                               | 1,264 29   |                    |
| Vulcanite walks . . . . .                                                                       | 1,044 70   |                    |
| Outside pens at deer-house . . . . .                                                            | 820 50     |                    |
|                                                                                                 |            | \$9,424 12         |
| Balance (being excess of receipts over expenditure of capital and carried to profit and loss) . | 13,394 48  |                    |
|                                                                                                 |            | <u>\$22,818 60</u> |

WILLIAM HACKER,

*Treasurer.*

Examined and found correct,

GALLOWAY C. MORRIS,

CHAS. W. TROTTER,

*Committee of Audit.*

## APPENDIX B.

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*To the Board of Directors of the Zoological Society :*

GENTLEMEN:—I have the honor to submit to you my report of the condition of the Garden of the Society, during the year ending on the 28th of February, 1893.

The collection, at the close of the year, contained specimens, in number and estimated value, as follows:—

|                                       |                   |
|---------------------------------------|-------------------|
| 252 Mammals . . . . .                 | \$39,710 00       |
| 443 Birds . . . . .                   | 4,308 00          |
| 226 Reptiles and Amphibians . . . . . | 995 00            |
| <hr/> 921 . . . . .                   | <hr/> \$45,013 00 |
| <hr/>                                 | <hr/>             |

The accessions during the year were:—

### MAMMALS:—

|                                |           |
|--------------------------------|-----------|
| Purchased . . . . .            | 43        |
| Presented . . . . .            | 101       |
| Received in exchange . . . . . | 1         |
| Bred . . . . .                 | 34        |
|                                | <hr/> 179 |

### BIRDS:—

|                     |           |
|---------------------|-----------|
| Purchased . . . . . | 138       |
| Presented . . . . . | 59        |
| Bred . . . . .      | 35        |
|                     | <hr/> 232 |

### REPTILES:—

|                                |           |
|--------------------------------|-----------|
| Purchased . . . . .            | 328       |
| Presented . . . . .            | 99        |
| Received in exchange . . . . . | 21        |
| Bred . . . . .                 | 142       |
|                                | <hr/> 590 |

### AMPHIBIANS:—

|                                |             |
|--------------------------------|-------------|
| Purchased . . . . .            | 24          |
| Presented . . . . .            | 5           |
| Received in exchange . . . . . | 26          |
|                                | <hr/> 55    |
|                                | <hr/> 1,056 |
|                                | <hr/>       |



Brief mention may be made of a few of the specimens received which are of especial interest.

On the 30th March a jackal (*Canis anthus*), from Algiers, was presented by Mr. John P. Crozer, of Upland, Delaware County.

On the 10th of May a pair of modest finches (*Amadina modesta*) from Australia and a specimen of the marail guan (*Penelope marail*) from Guiana, were purchased. On the same date were received from a dealer, two Lesuer's lizards (*Physignathus lesueri*) from Queensland, Australia and a snake from an unknown locality in tropical America, which, while allied to *Spilotes corais* is yet sufficiently distinct to require description, and to which I have accordingly given the name of *Spilotes corais xanthurus*.

On the 12th of May a number of reptiles and amphibians were received in exchange from Mr. Julius Hunter, of St. Louis, Missouri. Among them the following were new to the collection: western worm snake (*Carphophiops vermis*), Racine garter snake (*Eutænia radix*), long-tailed salamander (*Spelerpes longicaudus*), western cricket frog (*Acris gryllus crepitans*), and Carolina tree frog (*Engystoma carolinense*).

A fine specimen of the purplish death-adder (*Pseudechis porphyriacus*) and two of Schlegel's sand snakes (*Diemenia psammophis*) were received on the 18th of May. These are among the most venomous of the Australian snakes, and the former, known among the inhabitants as the "black snake," is held in universal dread.

A black-tailed rat snake (*Spilotes corais melanurus*) from Mexico was received by purchase on the 19th of May, and at the same time several specimens of Say's king snake (*Ophibolus getulus sayi*) from Louisiana, were taken in exchange.

On the 21st two specimens of the varied hemipode (*Turnix varius*) were purchased. The birds of this order (*Hemipodii*), found in India, Africa, and Australia, closely resemble quails in appearance and are of similar habits. Their position in the zoological system is rather anomalous, their

main relationship being indicated above, while other characters lead towards the tinamous and the plovers. The species added to the collection is from Australia.

On the 30th of May Mr. C. A. Bradenburgh of the Arch Street Museum deposited in the Garden a few small animals, among which was a squirrel monkey, which appears to me to be *Chrysotrrix lunulatus* (Is. Geoff), though it seems doubtful if the animal is distinct from the better known species, *C. sciurea*.

Through the kind interest of Mr. Harold Hanauer, of London, a number of European reptiles were received on the 8th of June. Among them were specimens of the European viper (*Vipera berus*) the common snake (*Tropidonotus natrix*) and a number of newts belonging to the genus *Molge*: *M. vulgaris*, *M. marmorata*, and *M. montandoni*, the last being a rare species for which the Society is under obligations to Mr. G. A. Boulanger, of the British Museum.

Two small guans received from Brazil on June 10th are *Ortalida albiventris*, and on the same day a female Indian gazelle (*Gazella bennetti*) arrived at the Garden.

A specimen of the ring-ouzel (*Turdus torquatus*), one of the European thrushes, was added a few days later, and also a black-headed caica parrot (*Caica melanocephala*) from South America.

Towards the close of the month various reptiles of some rarity were procured from dealers. Those which were for the first time exhibited, were the gigantic zonurus lizard (*Zonurus giganteus*), of South Africa; the muricated lizard (*Amphibolurus muricatus*) from Australia, and specimens of one of our most beautiful native snakes *Farancia abacura* from Florida and Graham's water snake (*Tropidonotus grahami*) from St. Louis.

On the eighth day of July two red-headed finches (*Amadina erythrocephala*) from South Africa were presented by Captain Peter Brown.

A specimen of the carinated tree boa (*Unqualia melanura*), received on the 5th of August from Cuba, differs materially

from the common type of color found in the species, being of a bright orange-yellow throughout.

Two specimens of the hawk-headed caique (*Deropterus accipitrinus*), one of the rarer South American parrots, were purchased on the 6th and at the same time a trumpeter crane, which was at first registered as *Psophia viridis*, but which now appears to me to be *P. obscura*, *PELZELN*, a species said to inhabit the south bank of the lower Amazon and never before contained in our Garden.

Several specimens of *Amblystoma tigrina*, one of the largest and most widely distributed of American amphibians, were received on the 15th from Missouri. On the 16th a young two-spotted paradoxure (*Nandinia binotata*) from Liberia, was presented by Mr. George C. Goss, of Philadelphia.

On the 24th of August Mr. Fred. Moesler returned from Europe, bringing as usual a number of birds for the collection. Among them were a male and female of the grand eclectus (*Eclectus roratus*), two Patagonian conures (*Conurus patagonus*), two red-headed weaver birds (*Foudia madagascariensis*), the paradise weaver (*Vidua paradisea*), the pin-tailed weaver (*Vidua principalis*), the green waxbill (*Estrela formosa*) of India, and De Filippi's meadow starling (*Trupialis defillippii*) from the Argentine republic. A number of other species not readily procured in this country were also included.

A black tanager (*Tachyphonus melaleucus*), of South America, was purchased on the 1st of September, and was shortly followed by another member of the same group, the yellow-fronted euphonia (*Euphonia affinis*), from Vera Cruz.

On the 24th of September, Mr. R. E. Peary, U. S. Navy, deposited in the Garden six Eskimo sledge dogs which had survived out of the team used by him on his journey to the north coast of Greenland last year. These dogs were procured by Mr. Peary from the Eskimos of Whale Sound, about latitude 78° north, and are probably the only specimens of their type which have been publicly shown in

this country since the return of Dr. Kane's expedition. Much interest has been manifested in them by visitors. Two other dogs now in the collection afford an interesting comparison, the one being used for sledging by the Indians of Alaska, the other for a similar purpose in Labrador.

Two specimens of the European roller (*Coracias garrulus*) were purchased on the 11th of October. On the 27th a beautiful specimen of the red-bellied squirrel (*Sciurus rufiventris*), brought from Mazatlan, Mexico, was presented by Mr. J. B. Daniel, Ashland, Pa.

A young male harnessed antelope (*Tragelaphus scriptus*) was purchased on the 29th, the species not having been represented in the Garden for a number of years.

In November two pine snakes (*Pityophis sayi*) from Arizona, were contributed by Mr. Herbert Brown, of Tucson.

On the 14th of December a young female muntjac deer (*Cervulus muntjac*), of India, was received by purchase, being the first of this curious animal procured by the Society. It is hoped that a male may be procured to complete the pair during the season now opening.

The second specimen which we have had, of the horned screamer (*Palamedea cornuta*) was obtained on the 4th of January, 1893. The difficulty of finding a suitable food for this bird, encountered in the first specimen, was equally great in this one, as no substance could be found at this season of which it would partake but lettuce, of which it ate sparingly once a day, but the quantity taken was so inadequate to the needs of its bulk that it gradually wasted away and died on the 8th of March. The species certainly seems unsuited to close captivity, though becoming tame and friendly with its keepers. Perhaps the experiment might result more successfully during the hot months of the year than in mid-winter, at which time both the specimens which the Society has had were procured.

On the 9th of January a number of tortoises (*Testudo græca*) from the southern part of Europe were purchased, and on the 10th of February two pairs of green jays (*Xanthura luxuosa*) from eastern Mexico were received.



The animals bred in the Garden were :—

|       |     |                                                           |
|-------|-----|-----------------------------------------------------------|
| April | 28. | 3 Coyotes ( <i>Canis latrans</i> ).                       |
| May   | 5.  | 1 Leopard ( <i>Felis pardus</i> ).                        |
| May   | 22. | 7 Silver Pheasants ( <i>Euplocamus nycthemerus</i> ).     |
| "     | 28. | 6 Reeves' Pheasants ( <i>Phasianus reevesi</i> ).         |
| "     | "   | 5 Amherst Pheasants ( <i>Thaumalea amherstiae</i> ).      |
| "     | 30. | 4 Coyotes ( <i>C. latrans</i> ).                          |
| "     | 31. | 9 Silver Pheasants ( <i>E. nycthemerus</i> ).             |
| June  | 14. | 1 American Elk ( <i>Cervus canadensis</i> ). ♀            |
| "     | 25. | 1 Indian Antelope ( <i>Antelope cervicapra</i> ). ♂       |
| "     | 28. | 20 Garter Snakes ( <i>Eutænia sirtalis</i> ).             |
| July  | 11. | 1 American Elk ( <i>C. canadensis</i> ). ♀                |
| "     | 27. | 1 " " " ♀                                                 |
| "     | "   | 40 Garter Snakes ( <i>Eutænia</i> —).                     |
| "     | "   | 6 Ring-necked Pheasants ( <i>Phasianus torquatus</i> ).   |
| "     | 28. | 1 Common Deer ( <i>Cariacus virginianus</i> ).            |
| "     | 29. | 1 Llama ( <i>Lama peruana</i> ). ♀                        |
| Aug.  | 2.  | 1 Bison ( <i>Bison americanus</i> ). ♀                    |
| "     | 28. | 9 Ground Rattlesnakes ( <i>Crotalophorus miliaris</i> ).  |
| "     | 29. | 2 Peafowl ( <i>Pavo cristata</i> ).                       |
| Sept. | 13. | 3 Eskimo Dogs ( <i>Canis familiaris</i> ).                |
| "     | 28. | 16 Banded Water Snakes ( <i>Tropidonotus fasciatus</i> ). |
| "     | "   | 6 Banded Rattlesnakes ( <i>Crotalus durissus</i> ).       |
| "     | 30. | 6 Ground Rattlesnakes ( <i>C. miliaris</i> ).             |
| Oct.  | 1.  | 16 Graham's Water Snakes ( <i>Tropidonotus grahami</i> ). |
| "     | 4.  | 1 Bison ( <i>B. americanus</i> ). ♂                       |
| "     | 7.  | 2 Common Raccoons ( <i>Procyon lotor</i> ).               |
| "     | 8.  | 1 Bison ( <i>B. americanus</i> ). ♂                       |
| "     | "   | 2 Pumas ( <i>Felis concolor</i> ).                        |
| "     | 10. | 2 Nylghaie ( <i>Boselaphus pictus</i> ). ♂ ♂              |
| "     | 29. | 1 Red Kangaroo ( <i>Macropus rufus</i> ).                 |
| Dec.  | 9.  | 1 Hog Deer ( <i>Cervus porcinus</i> ).                    |
| 1893. |     |                                                           |
| Jan.  | 3.  | 1 Hog Deer ( <i>Cervus porcinus</i> ).                    |
| "     | 27. | 1 Axis Deer ( <i>Cervus axis</i> ).                       |

During the summer a large quantity of terra-cotta drain-pipe was laid in the northern half of the Garden, which has

hitherto suffered much for want of a proper system of sewerage. That which has been introduced was designed to meet the present and all future needs in that direction. The cattle-pens, buffalo, elk, and camel enclosures have been thoroughly underdrained, and it is believed that the gain from increased health in the occupants of this portion of the Garden, many of which have, under previously existing conditions, suffered from the dampness of the ground, will in a few years fully repay the cost.

The erection of an iron railing around both sides of the deer and antelope house, constituting a series of outdoor pens communicating with the interior, completes a long contemplated improvement.

The fence on the Thirty-seventh Street line of the Garden has been renewed in the greater part of its extent, the new one being more substantial than the old one as well as several feet higher.

The very extreme range of temperature during July and August of last summer, and that in the reverse direction in January and February, were not without harmful effect upon the collection, such extremes pressing with severity upon living specimens collected from varying climates, in all portions of the globe. The estimated loss is, however, not greatly in excess of the average of former years and that part of it which occurred during the summer was, in particular, below that which might have been looked for.

Respectfully,

ARTHUR ERWIN BROWN,

*Superintendent.*

ZOOLOGICAL GARDEN, March 1st, 1893.









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